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approach

The Naval Aviation Safety Review



Huey Gunships Forever!

By Capt. R.E. Joslin, USMC

A Huey gunship and AH-1J Seacobra were scheduled for a section air-to-ground, ordnance-delivery flight. The Huey carried two pods of 2.75-inch, folding-fin aerial rockets (FFARs) and the Cobra also had rockets and 20mm rounds. The brief called to establish a racetrack oriented toward the target, with one aircraft inbound while the other was outbound on an offset, but parallel heading. The inbound helo would not call in hot until the outbound aircraft was clear of the target and at least abeam of the attacking aircraft. All switches would be safe until that time.

As the Cobra pulled off the target, the pilot called off cold and

began his egress leg. The Huey pilot rechecked that the master arm switch was off, and the weapons selector knob was off, and confirmed that the pilot under instruction (PUI) was not depressing the rocket firing switch on the cyclic.

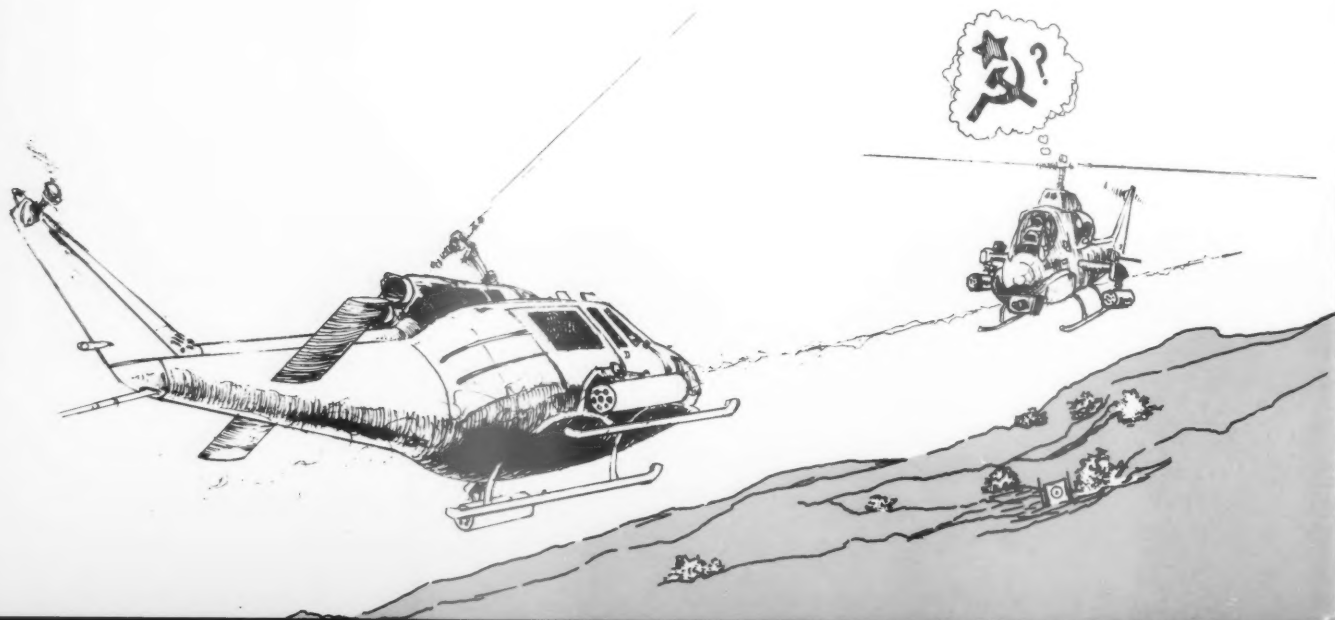
As the Cobra reached the Huey's 2 o'clock position, with a quarter-mile separation, the Huey HAC told the PUI that he was going to turn the Master Arm switch to on in preparation for the attack. This violated the briefed procedure that all switches would be safe until the other aircraft was abeam.

No sooner did the HAC turn the switch than the Huey shot a rocket downrange. Fortunately, the

helo had a nose-up attitude with a centered ball. The rocket fired straight ahead without hitting the Cobra.

After turning the master arm switch to off, the Huey HAC rechecked the selector knob and the PUI's firing switch, both of which were off. The stray voltage check before the launch had been negative. Postflight checks revealed some "loose electrons" that had caused the inadvertent firing. By not following the brief, the Huey crew came very close to scoring a confirmed kill. ◀

Capt. Joslin is the helicopter aerodynamics instructor with the Aviation Safety Program, Naval Postgraduate School.



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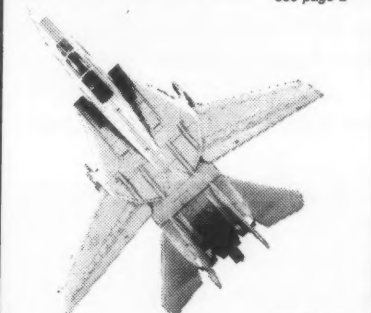
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On the cover: An SH-2F of HSL-34 lands onboard USS *Ticonderoga* (CG-47) in the Persian Gulf. Photo by PH2 Mark Kettenhoffen.

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Listen to Ginger

By LCdr. Steve Berger and Ltjg. Bob Fuentes

Our cruise had just begun and all the headaches of pre-deployment workups, exams and inspections were behind us. We were ready to have fun. On earlier cruises, our aircraft (affectionately called "Ginger") had seen all the action an SH-2F Seasprite could hope for. She had always brought her crew back for more, from South America to the Persian Gulf.

The fly-on went fine, but before the first hour of the first full flight was over, Ginger decided to

take a short break and went down for uncommanded control inputs. Not the greatest way to start the cruise, but hey, things could only get better, right?

After several days of troubleshooting, the mechs found the problem: a pair of 18-cent resistors. It took some time, but soon, Ginger was ready. As we launched, the pilot said, "Everything feels great. Let's get going."

Not so fast. Everything was fine for the first 30 seconds after

leaving the deck, but suddenly, the stick buried itself in the pilot's left leg. The circuit breaker for the automatic stabilization equipment (ASE) trim had popped and we were in an uncommanded left turn. We followed NATOPS to the letter and regained the ASE control. We hadn't flown for a while and now, everything seemed OK. We decided to continue the flight, determined to watch Ginger closely.

Our mission was to proceed 10 nm ahead of PIM and drop a

*Mechs found
the problem...
a pair of 18¢
resistors*





Ginger was trying to tell us something. By now it was dark and we were 12 nm from homeplate.

couple of sonobuoys so that the ship could run some ASW equipment tests, followed by practice night dopplers (SAR hovers).

The first part went as planned with no more problems. The dopplers also went fine. Then, we were tasked to lay a sonobuoy pattern halfway between homeplate and the battle group for more systems checks. That's when it happened again.

The pilot repeated NATOPS procedures and once again, we regained control of the cyclic trim. When the problem reoccurred less than a minute later, we knew Ginger was trying to tell us something. By now it was dark and we were 12 nm from homeplate. We called

the ship and asked for the best winds for a night ASE-off approach.

During inflight troubleshooting, we found that every time the pilot moved the cyclic trim switch to the right, the ASE three-phase (trim) circuit breaker popped. We were flying around at night, with no horizon, and no ASE or cyclic trim. Obviously, things could have been much worse, but at the time we had enough to worry about. We decided not to press our luck and land ASAP.

As we headed toward the ship, we discovered that the copilot's cyclic trim switch still worked. The ship was ready to recover us and we began our approach. The pilot kept the controls while the copilot used the trim switch on command. Needless to say, this method got a little interesting on final above the frigate's small, pitching deck. However, with good aircrew coordination and a little luck, we managed to land safely.

Could we have continued the flight? Probably. Should we? No, not according to NATOPS. The Seasprite is flyable with no hydraulic boost or ASE; however, flying around ships at night is dangerous enough with all the systems working. Why make it even more hazardous by flying with degraded flight control systems? I'm glad we listened to Ginger when she told us something. ◀

LCdr. Berger and Ltjg. Fuentes are assigned to HSL-35.

What's the Stunt du Jour Today?



ADCS W. Smith

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Have you ever been around someone who chronically violated NATOPS? You might have met him before. He's the guy who routinely disregards limitations and restrictions. He always stretches the normal flight envelope. If he's a squadronmate, there can be an incredible amount of peer pressure on anyone who wants to say something about him; recognizing the problem and trying to correct it can be very hard. If you know someone who looks like an accident waiting to happen, it's time to step forward. I know, because I had to do it

several years ago.

Joe had been in the command quite a while before I arrived. He was a great guy, ready to lend a hand as I got my feet on the ground in my first fleet squadron. He was knowledgeable and aggressive, and enjoyed a good reputation. He was the salty aviator; I was the new nugget and I would learn a lot from him. Joe firmly believed in aggressive flying and learning as much as possible. Not a bad philosophy, I thought.

As time went on and I gained more experience, however, I started noticing that he did things that weren't quite right. He over-spiced the aircraft and exceeded the G limit. I think we've all exceeded limitations but not on a regular basis. Joe seemed to seek the limits and

try to conquer them.

A pattern began to develop in the way Joe flew. When he was with a junior crew, he was in charge. The mission commander was simply an advisor and Joe did what he pleased. Limitations were to be disregarded. Crew coordination became less and less important. Joe was quickly becoming too good to need a copilot; a talking beanbag would have sufficed. But, put the skipper or a second-tour crewman aboard and Joe was a completely different person. Yes, sir, he was the model plane commander, thorough, knowledgeable and professional.

Joe was a good pilot and he knew procedures cold. He could also think through a problem—when he wanted



PHINACI WIGGINS

to. However, his headwork and performance had a double standard, one for his seniors and one for his peers.

Joe began to feel the peer pressure. The NFOs were not comfortable discussing their problems with him because he was a pilot and to Joe, NFOs were second-class citizens. We pilots were hesitant to "rat" on one of our own. It got to the point where every time I saw my name on the schedule with him, I wondered what the "stunt du jour" would be. I also wondered what damage he might do to his aircraft. But, I didn't say anything.

After several months of this stalemate, Joe and a junior crew were faced with a low-fuel, zero-zero, blue-water bingo to another carrier. Joe landed the airplane and to the outside world, he

was a hero. However, what went on inside the aircraft was enough to break the silence. There had been no crew coordination and Joe had essentially flown a multi-piloted aircraft by himself. The next day, he made an admirable (if not-quite-legal), very low flyby of the divert carrier followed by a Sierra Hotel, excessive-G break to his own ship.

Before anyone finally stepped forward, half the

It got to the point where every time I saw my name on the schedule with him, I wondered what the "stunt du jour" would be.

squadron had experienced, or knew of, Joe's aviation prowess. He was a legend in his own mind. Half the squadron knew that limitations were routinely disregarded and that the crew concept did not exist for Joe. Half the squadron felt that he was a mishap in the making, but we didn't say anything. It finally took the last straw to form a coalition between a few of Joe's peers to talk about his antics. The people in the chain of command were amazed at the reports of his behavior but with numerous witnesses, they began an investigation.

Peer pressure in a situation like this is alive and well. It's far better to stop a negative trend early on, when the correction can be relatively painless, than to succumb to peer pressure, say nothing and allow a big problem to develop. We were fortunate with Joe because no one got hurt. Silence *can* kill. ◀

Dropping the XO's Torpedo

By Cdr. J.J. Waickwicz



Workups!

Probably the hardest part of the cruise cycle. I was on my second set of workups with a cruise under my belt; I was on top of the world. I knew my job and my aircraft. No mission was too hard. Even though I was a young lieutenant, I felt like an old salt. Wrong!

During TYT I and II (which is now Advance Phase), I was crewed with a new copilot who had plenty of time in model but no ASW experience. The type training was in the Caribbean during the summer. All the crews required torpedo qualifications and the CV was modlocked within range of St. Croix.

Our mission was to fly to the St. Croix range for a torpedo qualification with two Mk-46 extorps. With the high-density altitude, fuel would be limited, yet calculations showed that there was plenty for the mission. If there were any delays, the crew could refuel at St. Croix.

After launch, two aircraft proceeded to the range. The 50-mile transit gave the crews plenty of time to go over tactics and complete all the required checklists. Once on the range, the play-

"Two wakes in the water!" What did we do? How dumb could we have been? The jettison switch releases both weapons!

ers established communications and we started the exercise.

We gained contact first, followed closely by our playmate. We were able to get our first torpedo off with no problems and got an immediate confirmation from the range that we had a good attack. Soon afterward, our playmate also got credit for a successful attack.

After reestablishing attack criteria, we pressed for a second launch and full qual. However, the torpedo didn't release. We made

an immediate recheck of all switches. Everything was OK. We continued to track while we investigated the problem and the second helo got his full qual. We assured ourselves that everything was set up properly and we tried to launch the torpedo a second time without success.

Our range time was nearly finished so we decided to safe the weapon and return to the ship. We would be scheduled for another range time tomorrow.

Back at the ship, we finished the paperwork and tried to analyze what had happened. The ordnancemen and maintenance troops couldn't find anything wrong. All the releases seemed to be working. As pilots gathered in the ready room, we ran over our theories and someone came up with the old phrase "If you jettisoned it and it was armed, it would run." *Oh, yeah! I remember that.* We all concluded we could have jettisoned as a last resort. Of course, being old salts, we decided it was best to return and try to get the aircraft fixed.

Since those were the days when torpedo quals were figured differently than they are today, the



XO and Ops O decided I'd go out the next day to drop the second torpedo. One minor problem was that the XO was going to do an open-ocean torpedo drop, so the ordies had to load his torpedo on our aircraft. No problem, we knew our left from our right; we would just drop ours.

The next morning, we re-briefed and verified that we could only drop the left torpedo and then had to return to the ship to hot-switch with the XO. Again, the distance was 50 miles to the range with the added requirement to land to have the ordnance personnel verify information off the open-ocean torpedo.

We arrived on time and had to wait for the right people to get the readings. After that was done, we headed out to the range.

As we flew, we joked about the guys telling us not to drop the XO's torpedo. What a bunch of jerks! We weren't *that* stupid. On range, we gained contact and got

all the preliminaries out of the way. We set up for our drop and double-checked everything. All was in order. My copilot said he wanted to get a picture of the drop so he positioned himself. We pushed the button, but, again, nothing happened. Not again! As we regrouped, the blood pressure started to rise; we needed this qual. We set up again and fired with the same result: nothing. As time started to work against us, the idea from the previous night crept into our minds simultaneously.

If we had the logic set up, we could jettison the torpedo and it should run properly. We re-briefed how we would do it. If the weapon failed to release normally, my copilot would already have the jettison selection switch to "Ext Stores" and would jettison the weapon. It looked right to us.

As we moved in for the kill, our sense of accomplishment was growing. We were going to get the torpedo off. Contact, attack crite-

ria, launch. Again, the torpedo didn't release. Go immediately to Plan B and jettison.

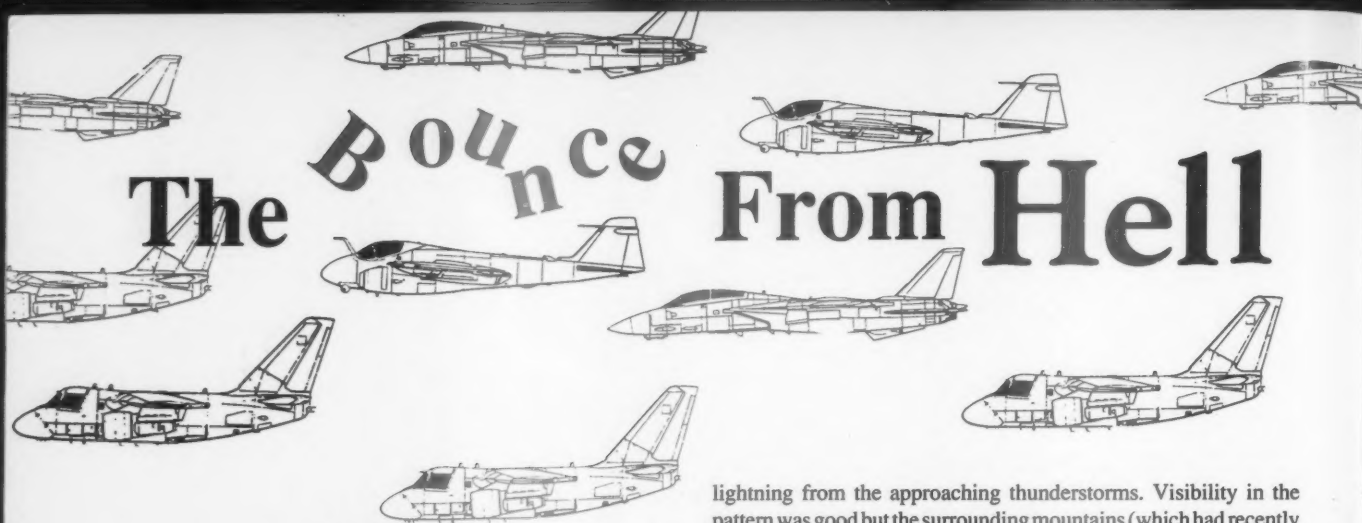
"Two wakes in the water!" *What did we do?* How dumb could we have been? The jettison switch releases both weapons! After we got straightened out on the range, we hastily retreated back home.

On deck, I watched the XO and his crew walking toward our helo. He squatted down, looking at the right side then at the left. If I could have crawled into my helmet, I would have.

We had let our desire to accomplish the mission override safety. We had relied on a back-room, bootleg solution to a problem that ended up proving to us that we weren't as clever as we'd thought.

Mission accomplishment in peace time should never overshadow safety. We train because we need to. If we were perfect, we wouldn't. There is always tomorrow.

Cdr. Waickwicz is the CO of HS-15.



By Lt. Steve Gebert

"Ninety-nine, Bullets, full stop next pass!"

That call was music to my ears. It may also have saved my life, or at least added a few years to it.

I'd better start off in the proper sea-story format. I was a Cat 1 RIO on my second WESTPAC deployment. We had completed the transit and were currently in port at NAS Cubi. My pilot was the newest in the squadron and had been med-down for the first part of the cruise. We planned to bounce while in port and then get him CQed the day we pulled out. He hadn't trapped or flown at night in a month so we really needed to get in those night bounces.

8 As much as we hated missing out on the liberty, we were both pumped up to go flying that night. *A quick bounce and back to the club for a few Cubi specials*, I thought.

Our brief was excellent. The squadron expert in the area told about the fruit bat hazards, the mountainous terrain and the thunderstorms that were expected later that night. He also cautioned us to be alert since half the air wing was bouncing that night and the tower wasn't used to that much night activity. The brief was just the right thing to get our minds back on flying, especially since neither of us had ever flown from that field.

We grabbed our gear and walked over to the field. We started up and nearly taxied down the parallel strip that the helicopters were using for landing practice. We eventually made it to the hold-short and took our place in line with nine other jets waiting to take off.

Each squadron had several pilots to bounce that night and only a few aircraft ashore, so everyone was anxious to get airborne and back to hot-switch as soon as possible.

Paddles was NORDO but expected to be back up quickly. The tower stepped in and started launching aircraft into the pattern.

Good for them, I thought, since they got the ball rolling. We might be able to get in a few warmup touch-and-goes before the actual bounce period.

During the launch, my pilot and I were distracted by a minor aircraft problem and lost track of how many aircraft had already taken off. We corrected the problem just as our takeoff clearance came over the radio. We taxied onto the runway and took off. We got our interval, turned downwind and started to orient ourselves. The night was clear but dark, except for the lights of the city and

lightning from the approaching thunderstorms. Visibility in the pattern was good but the surrounding mountains (which had recently claimed a jet and a life) were too dark to see.

"Let's fly a nice, tight pattern, OK?" I said.

"Roger that," my pilot replied.

We made our first touch-and-go with paddles still NORDO. On our downwind leg I noticed that we were eating up our interval.

Probably an S-3, I thought as I looked behind us to see if we could slow up and not get run over ourselves. I counted the jets in the pattern—nine airborne and one on the roll. The hold-short was empty. This was going to be interesting with 10 F-14s, A-6s, and S-3s in a pattern for six! What was paddles doing?

As if the situation wasn't bad enough, helos began making practice approaches in the low pattern and the thunderstorms finally arrived.

Since the mountains prevented anyone from extending upwind or downwind, the pattern started looking like a roller coaster as everyone used different altitudes to maintain separation. Paddles, who remained NORDO the entire time, later said that several aircraft had gotten as low as 150 feet at the 90. It was becoming an emergency, but we still managed to make several grueling passes.

With my pilot squeezing the stick into silly putty as I sweated in the rear cockpit, we just tried to stay alive instead of flying the ball.

"This is crazy!" I said.

Then the music came. It was the skipper who was also in the pattern. We gladly obeyed and landed.

A dull ending to a simple story? Maybe so, but thank goodness. I'm glad there wasn't more to tell. I relearned two important lessons that night.

First, it's not the tough hops that kill people; it's the "benign" ones.

"Come on, it's just another night bounce, right?"

Second, don't let that can-do attitude turn into a "can-die" attitude. My pilot and I sure had it that night. We felt that we just *had* to bounce right away to get him qualified and get back to hot-switch.

Judging by the 10 aircraft stacked up in the hold-short area, I'd say that the rest of the air wing had the same attitude. Certainly the tower had it when they tried to get everyone in the air no matter how full the pattern was. Most importantly, that same can-do attitude kept my pilot and me from immediately deciding to come to a full stop on our own when we saw a dangerous situation developing.

Lt. Gebert was a RIO in VF-2. He is currently assigned to the USAF Test Pilot School at Edwards AFB.

Operation *Rolling* Blunder

By Lt. Jed Munn

What goes rolling, rolling, *thump*, *thump*, rolling, rolling, "Whoop!", *squeee-eal*, "Whoop!" then *twa-a-ang*?

A very lucky S-3.

Rolling, rolling...

That's the sound of our mighty War Hoover before we missed the shortfield gear. We had been returning from an FRS FCLP period at an outlying field when I'd had the ex-

traordinary good luck to have the LSO-IP decline the left seat in favor of the right. What a deal: I got to drive home!

Inbound to homeplate, ATIS let us know, and approach confirmed, that there was standing water on the runways and that the field was in the middle of an antediluvian downpour. This was not a problem. We'd just lower the hook and be one step closer to the highly coveted field centurion patch.

GCA vectored us in to the secondary runway instead of old faithful in accordance with local noise-abatement directives. They dropped us off on the ball and I put us down after flying what was arguably my best pass of the night.

Thump, thump...

You guessed it! That's us missing the gear, which meant we were still...

Rolling, rolling...

That's right, rolling down the wet runway that points like a beacon at the big, international airport just across the bay. It's quick-decision time.

"Whoop!"

That's the sound of my trusty TF-34s as I firewall the throttles to go around



and try again.

Squeee-eal...

That's the sound the plane makes after my copilot yells, "I've got it!" and pulls the power back to idle and jumps on the binders. Result? We are still rolling, rolling at over 90 knots and show very little sign of slowing down.

To add to the entertainment, we now have about a 5-10-degree skew to the runway heading with about 4,500 feet remaining. Deft application of differential power and braking gets our nose pointed in the right direction as the LSO-IP decides he has had enough.

"Whoop!"

That's us again. The LSO-IP has now added full power, returning to the idea of going around.

Twa-a-ang! That's our hook, which was still down, grabbing the longfield gear and dragging us to a halt just as we were approaching liftoff speed.

Taxiing off the runway, made more difficult by a now-deflated starboard mainmount, I wondered how we got into this mess. Easy. By being so confident in the idea of an arrested landing

that we neglected to play the old "What if?" game. Namely, what if we miss the gear? As it turned out, the gear was not in battery, something neither of us had thought to confirm with GCA before landing.

My instinct to take it around was possibly correct but could have also proven catastrophic. Since we had

never thought this situation might occur, we never discussed how to do it. There I would have been in the goo, hurtling toward another airport only three miles away with no idea where to go. I was unfamiliar with the procedures for a missed approach for our home field's secondary runway and our approach plates were buried in our nav bags.

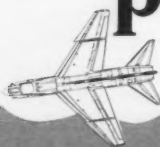
Maybe the LSO-IP was in the dark, too, about what to do once airborne. Maybe that's why he tried to get us stopped on deck once we were already there. In retrospect, though, having a contingency plan seems vastly superior to different and spontaneous decision-making by two pilots, each equipped with a full set of controls in the same aircraft. Remember that by dropping your hook you can seem to be taking care of all your problems when you are really setting yourself up for more. ◀

Lt. Munn is an S-3 pilot with VS-38.

For another view of field arrested landings, see "Field Arrestments: A Sign of Weakness?" page 18. —Ed.

"Flew into the water during routine mission, presumed lost"

By Lt. David F. Twyman



We briefed for a typical "Missile-Ex", using the mighty EA-7L (a TA-7C modified for an EW mission) as a simulated bad-guy missile to train the frigate's weapon system operators to

deal with the low-altitude missile threat. I was looking forward to the flight, an hour and a half of zorching along at 200 feet with as many knots as the TF-41 would provide—lots of

fun for me and great training for the frigate.

We walked to maintenance and I read the ADB. The gods weren't with me. There were multiple gripes: the platform dumping in flight, the radar altimeter failing, and, that worst-of-all gripes to an A-7 pilot, the HUD was failing in flight. I wasn't happy with taking that airplane to launch at twilight and recover at night. I didn't relish the thought of having my RADALT or platform fail—much less my HUD—and then having to shoot a GCA through the forecast fog back at home-plate.

There were no spares. I made some noise about not taking the plane because of the gripes. A few subtle and not-so-subtle remarks eventually made me take the plane so I wouldn't be seen as a "non-hacker".

I was still fuming about flying a piece of junk as we checked in to the Whiskey area with FASFAC. We switched to strike frequency and started an initial run on our target frigate. During the descent to the missile run altitude, I briefed the backseat ECMO that we would fly our run-in at 500 feet AGL since I didn't trust the RADALT or the HUD. I also told him that he should yell at me if I went a foot lower than 500 feet.

The ship asked if we had a sweet lock on the TACAN. We didn't. Their controller gave us a vector and a DME using our squawk. I found the ship with my radar and designated him as a target with the bombing system. I used that for a run-in heading. *Who needs a TACAN lock?* I asked myself. Passing 10,000 feet, my HUD started to flicker and the HUD caution light came on. I turned off the HUD. *Shoot, the TA-4Js I flew didn't have a HUD!* Passing 5,000 feet, the RADALT didn't light off. I reset it. No joy. It was inop. *Well, I didn't have a RADALT in T-2s. No problem, I can hack it.*

It was time to get down to business and fly this missile profile! I pushed

the power up to military minus a couple percent and descended through a hole in the fog. The sun hadn't set yet but it was pretty dark underneath this stuff. *No big deal, I thought, my visor goes up.* The backseater called inbound to the ship, and busied himself with the electronic countermeasures gear to make the ship's defenses work hard for a fire control solution. I concentrated on leveling at 500 feet underneath the dark layer of cloud and accelerated to 450 knots. The ceiling was lower than I thought.

At 500 feet, the cloud deck was right above us. The ship was tough to pick out from the sea clutter on the radar. The backseater called for LAT/LONG on the tactical computer for recording purposes. I flicked the toggle to LAT/LONG for him and returned to flying the plane and tweaking the radar. The pucker factor was definitely up. The altimeter said 400 feet, with no comment from the back seat. I needed to get back to 500 feet. *Sure is tougher flying down here without the HUD or RADALT.* I concentrated on flying the run in line. My heading had drifted and the DME was counting down fast. I switch to the 20-mile scale on the radar just as the backseater made some call over the radio that I didn't catch. *Damn! I've lost the ship in the sea clutter.* It was time to make my A-6 BN friends proud and sweeten up the picture. I figured that a little less gain and brilliance would bring her out.

At that point, a little red light and a warning tone should have gone off, but they didn't, because the radalt was broken and I had turned it off. At 200 feet an alarm did go off—in my head. I happened to scan my baro-altimeter, and I saw it slowly unwinding past 200 feet. My heart got a shot of ice water as I pulled hard on the stick and blasted up through the cloud deck. Leveling off at 2,500 feet, the backseater asked what that was all about. He hadn't even noticed our

shallow descent. We had been close to the frigate and he'd been making last-second adjustments to his equipment.

I flew the rest of the mission above the cloud deck, content to be bored flying on top of the fog layer. I had the rest of the flight to contemplate how close I had come to hitting the water. I had never understood before how a two-seat aircraft could fly into the water. "Lost radar and radio contact, presumed lost" was how *Weekly Summary* might have read. Now I knew how it could be done. I was thankful that this mission had only the setup and not the ending of a mishap.

Back at homeplate, I wrote up the downing gripes and thought about some of the mishap cause factors which the Aircraft Mishap Board could have used in the MIR had I not pulled up:

1. Aircraft not FMC for low-level flight.
2. Personal and peer pressure to get the mission completed.

3. Task saturation due to low proficiency: low flight time in the previous month, combined with flying a PMC plane low-level.

4. Pilot unconsciously relied on habit when the task load got high. He had been erroneously scanning his HUD for attitude and altitude information even though it was turned off. He broke that habit and scanned the baro altimeter just in time to pull up.

5. Even though pilot wasn't pleased at taking airplane, he felt he could "hack it" and complete the mission. The backseater trusted the pilot and did not back him up on the altimeter as briefed.

If you can add up mishap cause factors like these before you jump in your aircraft, it's time to do some soul searching. What is more important, a routine mission that can be rescheduled, or your safety and a valuable aircraft?

Lt. Twyman is a T-2C instructor with VT-26.



Back at homeplate, I wrote up the downing gripes and thought about some of the mishap cause factors which the Aircraft Mishap Board could have used in the MIR had I not pulled up:



Flat Spin Recovery in a Tomcat? No Way!

By Lt. Russ La Valle

On a very clear day with a few scattered puffs in the eastern Med, my RIO and I launched on an afternoon AIC hop with another F-14A(Plus). A third jet was to join on us at the end of the hop for a 1 v 1 v 1 ACM engagement. The AIC runs were pretty much max conserve with airspeeds just under 250 knots to save gas for the ACM portion. For the AIC, my aircraft configuration was: roll SAS on, and alpha computer circuit breaker out. Our altitude was 26,000 feet and the other aircraft was at 19,000 feet. Our airspeed at the start of the

maneuver was 250 knots.

After a few AIC runs, we began another with ourselves as the fighter. Getting close to the merge, aspect was nearly nose on, so I decided to do a vertical re-attack. Overhead the bogey, I rolled inverted and started a moderate pull toward his aircraft with throttles close to military. I kept him on my lift vector through the maneuver, and at about 70 to 80 degrees nose low, pulling back up to the horizon, our jet suddenly, and without warning, jerked left violently and then immedi-

ately swung back to the right. I quickly eased the stick forward and made sure that I didn't have any lateral input.

The F-14 kept slicing to the right, out of control, so I made sure my harness was locked and reduced power to idle. We quickly (within 1 or 2 seconds) entered what appeared to be a flat spin. We were 10 to 15 degrees nose low, the turn needle was pegged right, with AOA at 30 units (all white on the tape), and airspeed was hanging just under 100 knots. There was constant yaw (my RIO reported later he saw 70 degrees per second on his spin arrow display) and no pitch-and-roll movements.

There were about two Gs of eyeball-out G, but this was in no way debilitating. I added full left rudder as soon as I recognized these conditions. I heard, "Stick forward, stick forward..." from my RIO, backing me up on spin-recovery procedures.

I made sure that the stick was forward by pushing forward to the stops and back a bit.

The nose seemed to be slowly lowering below the horizon (getting to about 30 degrees nose low); we had started the spin at about 20,000 feet, but the aircraft didn't seem to be recovering quickly enough. As my RIO prodded, "Stick into," I moved the stick to the right. We were at 12,000 feet.

That did the trick because as soon as I moved the stick, the nose dropped dramatically and yaw stopped. I immediately neutralized rudder and stick, and

...our jet suddenly, and without warning, jerked left violently and then immediately swung back to the right.



waited for the airspeed to rise. Airspeed quickly climbed, passing 200 knots. Then I began pulling the nose up to the horizon at about 17 units AOA while adding military power.

It was hard to resist pulling hard on the stick, possibly putting the jet into another stall (which is a common occurrence). During the pull-out, my RIO continued backing me up. We bottomed out at about 8,000 feet, and then climbed back to 19,000 feet.

During the entire sequence, we both remained surprisingly calm. We knew exactly what was happening and what we had to do. I thank all the spin training I've received. Going through T-2 spin training gave us both useful and valuable experience.

After the incident, we both felt ready to continue with the rest of the hop as briefed. We made another AIC run or two and then set up for the ACM. Following the engagement we made a normal recovery.

Spin and Out-of-Control Training is invaluable to Naval Aviators. In our case, calm crew coordination helped us recover from the spin in our multi-million-dollar jet. Also, quick action on NATOPS procedures kept us from completely entering a flat spin and let us handle the mild flat spin we were in.

The terrific GE F110 engines in the F-14A(Plus) didn't even burp during the entire incident.

Finally, it wasn't the smartest thing we could have done to continue with the AIC and ACM. We both wanted to get back on the horse, but holding overhead the boat would have been a better idea. Quick, reflexive unloading when the aircraft does something you didn't ask for works most of the time, but in an accelerated stall such as we experienced, you need to know the remaining procedures like you know your own name.

Lt. La Valle is a pilot with VF-103.



The Kamikaze Kanaries of



The birds had flown south to Rio for their annual fly-in. The main topic they discussed was the constantly increasing mortality rate among their feathered friends because of airplane strikes. The following statement by the speaker, Horatio Hornblower, has been reprinted here so that all who couldn't attend the meeting may be informed as to the gallant efforts which are currently underway.

Operation Revenge

By Cdr. Mark W. Danielson

Our intelligence office intercepts message traffic from the U.S. military detailing the carnage taking place in the skies. In one case, a single C-130 massacred more than 200 birds! We are talking about three entire generations of the Skybird family.

Our front office meticulously maintains statistics which show that the mortality rate has increased *more than 200,000 percent in the past 40 years*. This pattern cannot be tolerated any longer. It is time for action!

We have studied the tactics used by the underdog in previous wars. Kamikaze pilots provided a stunning example, delivering deadly blows to their adversaries. We also have experimented with sacrificial birds. In the words of Jonathan Livingston Spock, our first kamikaze volunteer, "the needs of the flock outweigh the needs of the one."

Jonathan managed to select a prime target—a B-1 bomber—and knocked this marvel of technology out of the sky. He was posthumously awarded the Order of the Royal Condor medal for his extreme valor.

This single attack generated an enormous amount of military message traffic and kept the skies clear of aircraft for weeks. We applaud his efforts in furthering our cause to make the skies permanently free of these

polluting beasts.

We have had a select group of volunteers step forward since Jonathan's flight to form what we call "Operation Revenge." These proud birds will bring us glory as we watch the pitiful aircraft fall. The aircraft tactics on birdstrike prevention and awareness have been intercepted and carefully reviewed. We have responded with new tactics of our own.

We have learned that we must not be predictable. Pilots will try to climb and turn to avoid confusion, thus saving their precious metal. We must climb and turn with them. We must fly more at night and become stealth fighters. It is easy to pick out the airplanes with all their pretty lights but they can't see us until it is too late.

We must ensure that we put at least one bird in each intake to achieve our goals. Wing damage does little except waste our valuable efforts. The best attack against propeller-driven aircraft is to go through the windshields and take out the pilots. Our studies have shown that propellers suffer little damage while fragile, arrogant pilots cannot tolerate much physical abuse. In fact, they are not even very good at identifying targets. It seems that no matter what kind of bird they see coming at them, they always cry, "Duck!" just before impact. It's amazing that these creatures can even

find their way around an airport.

The final tactic we have learned is to attack while the aircraft are low and slow. Our studies show that when planes are in this configuration, their pilots are preoccupied with looking inside the cockpit and are very susceptible to receiving a fatal blow from one of our volunteers. It is further revealed that many pilots do not respond well to aircraft difficulties resulting from structural damage when close to the ground, which increases the chance of success.

We birds will not disappear. We are the ones who have enjoyed the skies since the beginning of time. Now is the time for action! I have a dream that all birds, no matter what flock they are from, can one day fly without fear of death or injury. I have a dream that we may once again breathe clean air and that our annual fly-in can focus more on social events than the real issues that threaten us every day.

We must continue to fight. The odds are in our favor. Let's not forget those who have died for us. ◀

Cdr. Danielson is the Safety Officer for NAS Dallas.

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Ejection Over the Beach!

By Lt. John Hoyt

We briefed for an NVG training sortie at 2030. It would be a cold start, with 18,000 pounds of fuel and no ordnance. We taxied at 2200. We rotated at 145 knots and got the gear up. As we quickly accelerated through 185 knots, I raised the flaps and slats. By now we were at 190 knots. I saw the altitude passing 300 feet and the airspeed approaching 250 knots as we climbed to 3,000 feet in military.

As my BN called departure, we heard a loud explosion, followed by a bright flash and steady, white, incandescent glow from the tail. We also heard a persistent, grinding noise. Later, people on the ground reported that they could hear the explosion and see a flame that was half the length of the aircraft coming from the center wing.

All engine indications were normal with no caution or warning lights. We wondered which engine was on fire. We both saw the glow of a fire but the instruments didn't indicate



a problem. We were still in a takeoff condition and were uncomfortably close to the ground with what ended up being catastrophic engine FOD.

I made a cut toward the coast while my BN called "Mayday!" on departure. Evidently, the tower was not watching departing traffic since we received no warning call from them. Aside from our Mayday call there was no communication.

My BN thought it might be the right engine since the glow was on his side. I thought it might be the *left* engine because I could see the glow on *my* side. I started to pull the left throttle back then changed my mind and went to MRT again. I still had no abnormal indications, no convincing evidence as to which engine was affected.

As I searched for some clue, the left flight-hydraulic pump went to zero, followed closely by two fire lights. I told



I left my seat pan on to avoid entangling it in the powerlines as well as for protection if I went through a tree. I went through a tree.

the BN to prepare to eject. Within 5-10 seconds, a third fire light came on. I looked through the pilot's quarter panel and saw Pacific Avenue passing beneath us. I called for ejection three times.

I closed my eyes and felt the shock of the BN's seat as he went through the canopy. Then I pulled my lower handle. I felt the force of the shot, the tumbling sensation and then the opening shock of my chute. I opened my eyes and looked up to confirm a good chute.

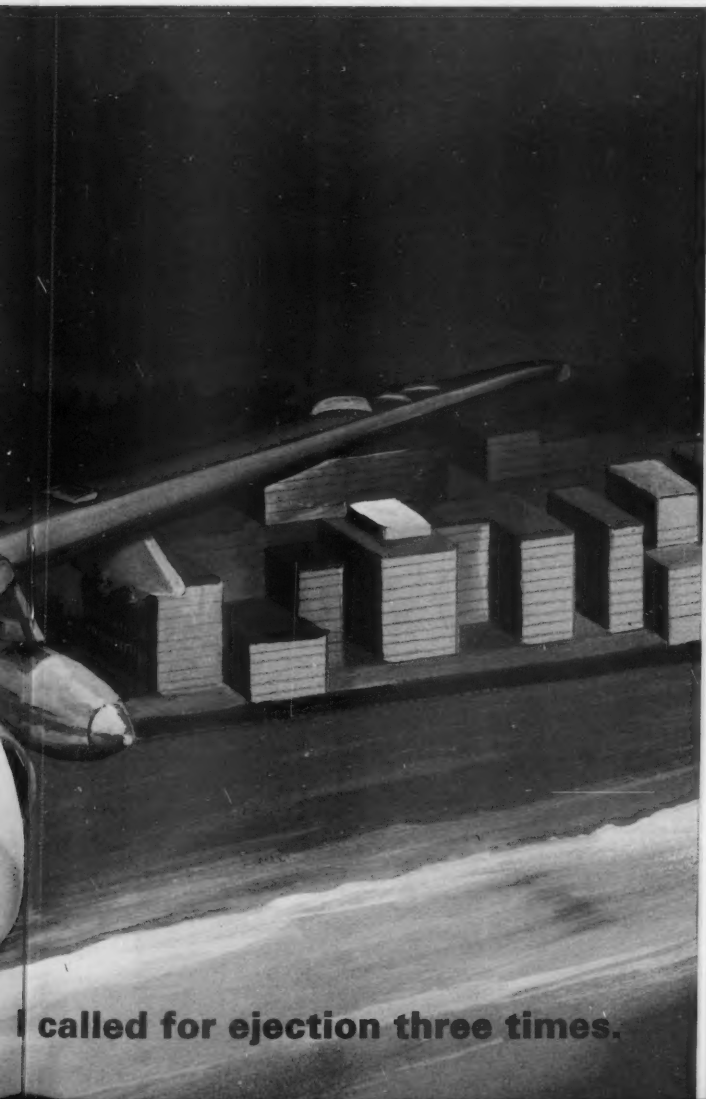
I saw my BN 100 yards to my right with a good chute, too. I inflated my LPA, released my mask and activated the four-line release, realizing that I had to steer myself away from power lines, trees and buildings. The moon was three-quarters, rising in the east; I could clearly see the beach. I left my seat pan on to avoid entangling it in the power lines as well as for protection if I went through a tree. I went through a tree.

I penetrated the outside half of a 50-foot oak and managed to break all the branches that were in my way. I ended up six inches above the ground with nothing worse than a few abrasions and a sore back. My BN landed on 24th street, just missing a high set of power lines. He got a few scrapes from the asphalt. Our A-6 hit the water a mile off the beach.

Although we had briefed takeoff emergencies, nothing included what to do if we had an engine fire on takeoff (or catastrophic engine fire) with no associated engine or flight-control abnormalities. We should have briefed for such possibilities.

My ejection brought home how important it is to have a solid commitment to preflight decisions, especially when dealing with engine fires. Instead of a takeoff fire, how about a fire on departure, or short final, or maybe the abeam position? Obviously, no one can foresee all situations, but by deciding on a few guidelines before the emergency—such as at what altitude to retard the throttle of the affected engine with a fire—you'll be in a much better position to survive.

Lt. Hoyt was the pilot of the A-6E that crashed off Virginia Beach in November 1990. He is assigned to VA-42 but was flying with VA-176 as an NVG instructor when this mishap occurred.



I called for ejection three times.

Field Arrestments:

A Sign of Weakness?

By LCdr. William C. Martin, USNR



18 **The** young aviator was involved in a multi-bogey engagement. He now had his skipper in the HUD. He couldn't believe it! Just a few more angles and he would have a Fox Two. Suddenly, the intensity in the cockpit was interrupted by a shudder and explosion. He declared an emergency and pointed his nose toward homeplate. He thought he'd had a midair and dropped down to 10,000 feet to make his controllability checks. He was relieved to find that he could still fly at his max trap approach speed.

There is a feeling among tailhookers that while trapping aboard ship is real "John Wayne" stuff, trapping ashore shows weakness and tells everyone that your aviation skills are not equal to other people's skills.

He said that he did not need to make a field arrestment. His approach and touchdown were fine but as he left the shortfield gear behind him, he had a hard time steering. The aircraft became uncontrollable and departed the runway. Unscathed but embarrassed, the young pilot secured the cockpit and began his long, lonely walk to the hangar.

What happened? There are probably a lot of aviators out there who, after midairs and finding that their airplanes were still flyable, would have decided not to use the shortfield gear. Why?

Naval Aviators are smart, dynamic leaders, but they are also subject to peer pressure. There is a feeling among tailhookers that while trapping aboard ship is real "John Wayne" stuff, trapping ashore shows weakness and tells everyone that your aviation skills are not equal to other people's skills.

Is a field arrestment a sign of weakness? I don't think so. I suggest that it has a lot to do with headwork and knowledge. In fact, the runways are littered every year with aircraft that have run out of control during the landing rollout. Here are a few facts that I hope will help eliminate the feeling that field arrestments are for sissies.

In our first example, our young aviator had no way of knowing that below max trap approach speed, he

H. L. Doyle, PH2



would have found that his controls were ineffective. Most NATOPS manuals require that controllability checks be performed to find the minimum controllable airspeed. Then, the pilot must add 10 knots for his approach speed. Upon landing, the aircraft as it decelerates is still under some or all of the aerodynamic forces it uses during flight.

We use the controls—mostly rudder—as we decelerate to maintain directional control. In fact, most rudders are effective down to 60-80 knots. But what if your rudder is damaged? It may cease to provide effective control after landing and may, instead, contribute to a lack of control. If our aviator had decided to take a trap, his aircraft would have been parked in front of the hangar instead of in a cornfield.

Let's take another example. You're on final at NAS High Desert, which has an elevation of 5,000 feet. You are committed to flying a no-flap-no-slat approach but you decide not to take a trap because you are at minimum weight so your approach speed is manageable. It's CAVU, daytime, you're hungry, and besides, it's just not cool to make a field arrestment. You're conscientious, however, and you even checked your PCL and found you had plenty of runway. After touchdown, you blow a tire and eventually, as you pass the shortfield gear, you become a passenger and depart the runway. What happened?

Simply put, you exceeded the tire speed and it failed. While your indicated airspeed was the same at 5,000 feet elevation as it would have been at sea level, your true airspeed was significantly higher. A rule of thumb is:

$KTAS = KIAS + 2 \text{ percent (KIAS) for each 1,000 feet MSL. The rule is valid to 35,000 feet.}$

Let's assume that on this approach your no-flap-no-slat approach speed was 160 knots. Using the rule, your true airspeed at 5,000 feet would have been 176 knots for a tire that had a never-exceed speed of 170 knots.

Here's a final example. You're about to land in a perfectly good aircraft, but it's raining and there is standing water on the runway. You assess your capabilities and decide an arrestment isn't required. You land, and lo and behold, your aircraft hydroplanes and departs the runway. Hydroplaning is a phenomenon that occurs when a tire loses contact with the runway surface because of water. There are three forms of hydroplaning (dynamic, viscous, and reverted rubber) and three important things

to know about wet runways and hydroplaning:

- At least 30 percent more distance is required to stop on a wet runway.
- Crosswinds are deadly on wet runways.
- To find your dynamic hydroplaning speed use the formula below.

Knots = $9 \times \text{tire pressure (lbs)}$

In all the above cases, a simple decision to take a trap would have avoided a mishap. Still not convinced?

When you have an emergency, the decision to take a field arrestment provides predictability. As you make your emergency approach, the crash crew anticipates your arrival and final point of rest. Predictability also helps your aircraft. You are safely in the wire, so blown tires, loss of directional control, and hydroplaning are all unknown variables that have been eliminated. Did you know that for every extra 1,000 feet of field elevation, your landing distance increases approximately 3.5



percent?

While no one is advocating that every emergency should be concluded with a field arrestment, we all know that every year, many aviators join the I-Should-Have-Taken-A-Trap Club. In my own ready room, we've sat around Monday-morning-quarterbacking about "Old Joe," who had to tell the CO why his plane wasn't parked on the front line because he failed to take a trap.

LCdr. Martin served with VAQ-139 as an EA-6B pilot. He also flew with VX-5. He is currently the wing LSO for CVWR-30.

See "Operation Rolling Blunder" on page 9 for more on field arrested landings.—Ed.

By Lt. John Riggs

The two-week det to MCAS WESTPAC was going to be fun, a welcome break from target towing and AIC missions we JOs had become accustomed to. Our VC squadron would provide ACM training to a deployed Marine F-4 squadron. We arrived with five A-4s and a maintenance crew.

Most of the hops were 2 v 2, with standard 20-mile setups. We were limited to 90-degree turns during engagements since we had not completed the Fighter Weapons School adversary syllabus. Most of the training was limited to radar intercepts for the Phantoms, letting them try to break out both A-4 bogeys.

On today's flight, I would be in the back seat of a TA-4, flying wing on an A-4E. During the brief, we covered standard ACM ROE, out-of-control procedures, altitude splits, and knock-it-off calls.

The Marine crews were sharp, breaking us out of the chaff and maintaining radar lock even when both A-4s turned together. We had the low-altitude block with the F-4s working the high block.

On one run-in, we took an altitude split off the lead, flying 3,000 feet low. We listened as the lead F-4 RIO called bogey dope to his wingman. They had our lead padlocked. As the RIO called 10 miles, we started a climb to the top of our altitude block in hopes of sneaking in a tail shot as the Phantoms went after our lead aircraft.

My front-seater called, "Tally one, two o'clock, slightly high." I looked but saw nothing. Then, suddenly, I spotted the wingman off the nose. We had him boresighted!

"Bunt the nose, bunt the nose!" I yelled. Just as he pushed over, kawhooo-omph! We passed the wing F-4 starboard-to-starboard at no more than 50 feet, slightly low. The TA-4 bucked as we flew through the Phantom's jetwash.

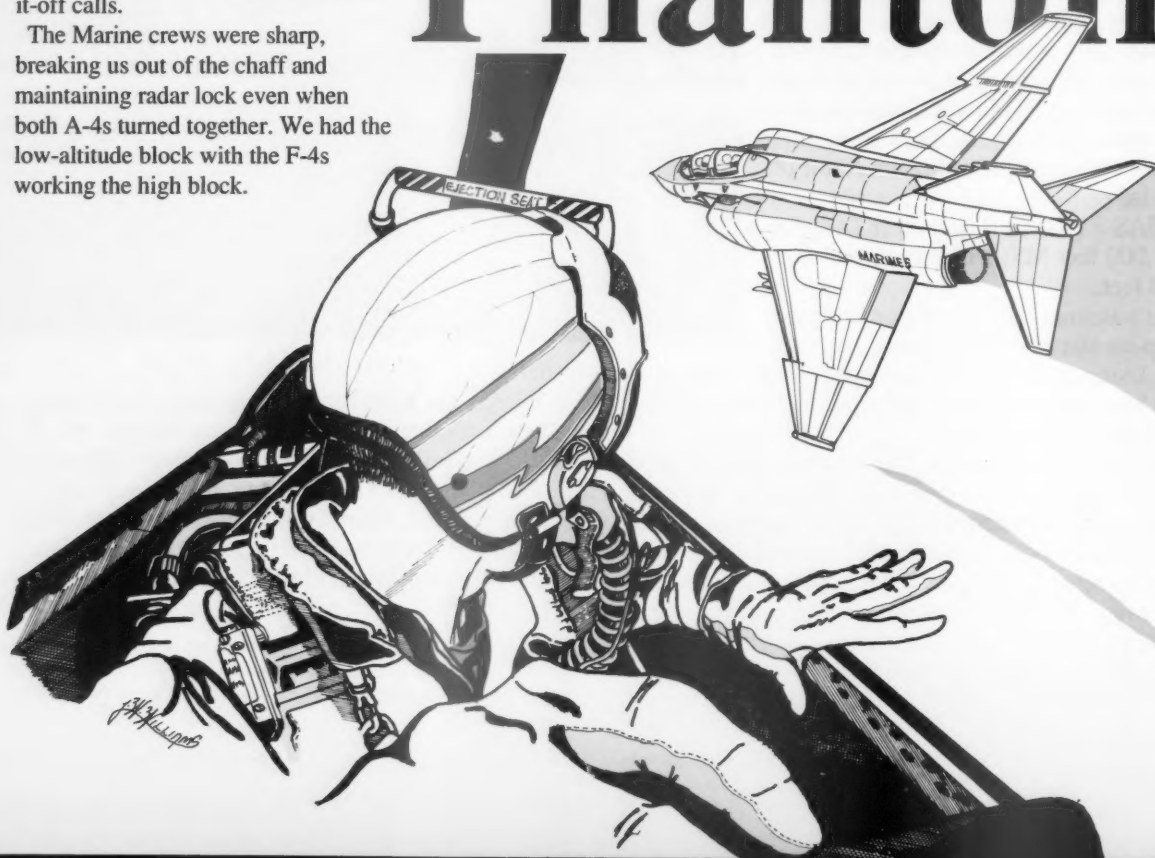
"Knock-it-off! Knock-it-off!" we

called. What a sobering experience. We had come within a couple of wingspans of meeting the F-4 face-to-face. Did we climb through our altitude block? Both of us had been out of the cockpit, waiting for the merge.

The most thorough brief is no substitute for vigilance. As copilot, I should have backed up my pilot more vigorously. ROE must be briefed—thoroughly, including altitude blocks, minimum 500-foot bubble around all aircraft, and minimum face-shot envelope of one mile. Also, fly what you brief.

LT. Riggs flew A-4s with VC-5. He now flies S-3s with VS-37.

Close Call With a Phantom





The Gremlins' Return

By LCdr. Tom Kule

The whole squadron was excited about our transition from P-3As to P-3Bs. Maintenance was hot on the gripes, and the planes were shaping up. We launched at noon and headed for the op area. The weather was CAVU but forecast to deteriorate back home. We began our surface search, but the pilots' radios turned to static and the radar started to degrade, and the mission became an ESM search.

An hour later, we worked out the problems and got the radar back on line. With our mission complete, it was time to head for an intermediate NAS for a thorough debrief. After the debrief, we rechecked the weather at home. The earlier forecast was correct: light to moderate icing and turbulence, isolated embedded thunderstorms, driving rainshowers with ceilings down to minimums and one-mile visibility in fog.

Halfway into the 70-minute flight, everything seemed OK. As day slipped into night, however, the

gremlins returned. The copilot's lighting flashed and his Grimes light went out. His flashlight didn't work, either; it had been OK for the preflight.

Time for the sensor operator to sit behind the copilot with his flashlight on the copilot's approach plate.

"Flight, radar...uhh-h...radar just went down, but I think it looked good for 50 miles."

"OK," the pilot responded, "but we still have 250 miles to go and that's where the worst weather is. ATC says they'll try to keep us advised, time permitting."

One hundred miles out, intermittent icing and turbulence. We descended to 3,000 feet. It was black outside in heavy rainshowers, a bouncy ride. The flight station was busy. The AW's flashlight plate was unusable.

"Copilot, take the aircraft while I set up my approach plate," the pilot said. "Watch your nose attitude."

"Pilot, take the airplane," the copilot soon called, "I've lost my attitude

gyro and heading reference systems. Switching to the alternate source. How does yours look?"

"I think my alternate's OK." We were back in the game. Now we had to get this plane on the ground.

Vectors to the PAR finally got us settled down but the PIC seemed late making the controller's corrections. The PIC was shouting, trying to communicate in the cockpit. His radios were overrun with static but he had gotten used to it. If he had selected alternate radios or told the copilot about the problem, we might have been able to fix the radios.

Ready, set, decision height...the field was in sight at 12 o'clock. We had three down-and-locked. Checklist was complete. Land flaps! We made it!

Once again, a "routine" flight became something more. Preflight, brief and cockpit communication are the essential elements in flight coordination. This coordination doesn't just happen; it takes practice. ◀

LCdr. Kule flies with VP-64.



Left to right: LCdr. Kenneth P. Neubauer, LCdr. James K. Scholl

LCdr. Kenneth P. Neubauer
LCdr. James K. Scholl
VF-33

While accelerating for a section G warmup before a 2 v 2 FFARP mission, LCdr. Neubauer (pilot) noticed that the wingsweep position was lagging the wingsweep program by a considerable margin. When he tried to use the manual mode to match the wing position with the program, the wings were electrically commanded full-aft (68 degrees wingsweep) and froze. LCdr. Neubauer and LCdr. Scholl (RIO) performed all NATOPS procedures to get the wings forward, without success. They then prepared for an aft-wingsweep recovery at NAS Oceana.

After burning down to 1,900 pounds of fuel (landing weight of 45,000 pounds), the crew set up for a straight-in approach to runway 5R, which was 12,500 feet long. LCdr. Neubauer flew the approach at 215 knots. He set the landing attitude as he crossed the threshold, retarding the throttles to idle. He deployed the speedbrakes and let the F-14 float to touchdown at 180 knots.

LCdr. Neubauer secured the right engine on touchdown, while using a combination of aft stick and judicious braking to bring the Tomcat down to

taxi speed with just over 1,000 feet of runway remaining.

The problem was a broken wingsweep actuator that froze at 68 degrees of sweep.

Lt. Blaise Duhe`
Ens. David Holmes

Lt. Duhe` (IP) and Ens. Holmes (SNA) were preparing to check out of the Meridian work area at 13,000 feet MSL when their T-2C went into an uncommanded, right-wing-down attitude. The IP took control and tried to counter the apparent input from the ailerons only to find that he needed extraordinary force to maintain straight and level flight.

Lt. Duhe` told Ens. Holmes to select trim disconnect. The stick forces continued to increase and the instructor told his student to reselect normal trim control to try to retrim the aircraft. This action gained minor relief from the stick forces.

Working together, the IP and SNA decelerated the Buckeye and investi-

gated for split flaps by cycling the flap-control lever below 165 knots. They were, however, unable to correct the hard-over aileron condition.

Lt. Duhe` then told Ens. Holmes to select "hydraulic boost" to off, primarily in response to transient, longitudinal stick inputs that had started. This action also didn't fix the problem. The IP declared an emergency and set the aircraft up for a straight-in landing to runway 19L at Navy McCain. Ens. Holmes kept control by wedging his lower leg (from the top of his knee to his foot) between the stick and the right bulkhead of the forward cockpit. The IP maintained leverage for maneuvering inputs from the rear cockpit.

The crew tried a shortfield arrestment, which resulted in a hook skip. They maintained directional control down the runway using rudder and counter-aileron force only to 60 knots.

After landing, maintenance found a failed aileron-trim actuator. The aileron boost package is undergoing an EMI to determine the cause of the hard-over aileron condition.

Left to right: Lt. Blaise Duhe`, Ens. David Holmes



BRAVO ZULU



Left to right: AWC Glen Allen, LCdr. Gary Stark, Lt. Juan Rodriguez, AWAN Larry Sosa

LCdr. Gary Stark
Lt. Juan Rodriguez
AWC Glen Allen
AWAN Larry Sosa
HS-3

Following a hot pump and crew switch, the crew of Troubleshooter 613 were to launch from the carrier to pursue a hot submarine contact. Approximately 15 minutes after launch, they noticed a 20 percent split between engine torques. LCdr. Stark took control and scanned the engine instruments which showed No. 1 engine oil pressure falling through 12 psi, NG decreasing below 60 percent, TF pegged, and the No. 2 engine at topping power.

LCdr. Stark suspected that the lube

pump was about to fail and called for full power. He also began immediate action items and established safe single-engine flight. The aircraft stabilized at 150 feet and 90 KIAS.

Following PCL procedures, the crew secured the now-failed No. 1 engine, dumped fuel, and briefed for a single-engine approach to the angle deck. LCdr. Stark recovered safely, touching down on centerline just beyond the arresting gear with 10 knots of ground speed. He lowered the collective and used the wheel brakes to stop the H-3.

approach/april 1991

LCdr. Michael H. Orfini
Lt. John G. Butler
AW3 Michael P. Thompson
HSL-34

During a flight to NAS Lakehurst, this SH-2F crew lost tail-rotor control. They declared an emergency. After trouble-shooting by LCdr. Orfini (PIC) and Lt. Butler (copilot), they found they had no control over the tail rotor's pitch.

The crew discussed NATOPS emergency procedures, but during each landing attempt, a severe yaw to the right developed, which made the landing impossible. During each approach, the pilots varied airspeed, altitude, nose attitude and engine power to determine the best combination for a safe, running landing.

Finally, on the ninth approach, with low fuel, LCdr. Orfini and Lt. Butler used airspeed, engine throttles and brakes to make a safe landing. ◀

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Left to right: AW3 Michael P. Thompson, LCdr. Michael Orfini, Lt. John G. Butler



Human FOD

By Lt. Jack Brennan

NATOPS says that procedures are no substitute for good headwork in an emergency. In many cases, specific procedures may not even exist. However, a truly creative aviator, lacking both a NATOPS manual and any semblance of common sense, can find many ways to get into and out of hair-raising situations in an airplane. As a case in point, here's an event that occurred long ago in my pre-Naval Aviation youth.

If there was an emergency procedure designed to cover the predicament I found myself in, it would be called something like "Horizontal Pilot Lodged Aft in Tandem-Seat Aircraft." (Unfortunately, this had nothing to do with my joining the "Mile-High Club.")

I had just dropped off my second passenger at a controlled airfield after a local fam flight. I was going to return to my uncontrolled home field. The plane was my dad's World War II-vintage SNJ trainer, a 600-hp, radial-engined monster that was very effective at turning avgas into noise. My fuel state was slightly low, but a shortage of

OPTAR funding for non-contract gas (read low on bucks) convinced me to launch for the short hop back home without refueling.

Everything seemed OK as I climbed to 3,500 feet in a gradual left turn. As I throttled back, I noticed a loud rushing noise that had been drowned out by the engine. Glancing back, I saw that I had left the sliding rear canopy open after the last passenger exited. Now I was in a quandary. If I returned home with the back hatch open, my old man would blow his stack for my sloppy preflight. On the other hand, if I returned to the field I'd just left, shut down, unstrapped and closed the canopy, I wouldn't have enough gas to take off.

My solution was to trim the airplane for cruise, unstrap and turn around, and try to reach the canopy handle. Unfortunately, the tubular steel cabane structure (rollover bar) between the seats presented a formidable obstacle. Try as I might, I couldn't stretch far enough to reach the handle. *Maybe if I squeezed a little bit further through the gap*, I thought. That did the trick. I

My problem was to get back into the front seat; I was firmly stuck in the A-frame-shaped opening, pinned at the shoulders and rib cage.



grabbed the handle and with a healthy shove, I closed the canopy.

Now, my problem was how to get back into the front seat; I was firmly stuck in the A-frame-shaped opening, pinned at the shoulders and rib cage. I had become *human FOD!*

A wave of panic washed over me as the plane began a shallow, turning descent. Luckily, I could reach the aft-cockpit stick and I clumsily leveled the wings and brought the nose up. I overcame a brief period of pilot-induced oscillations which started from the reversed stick movement needed (push down to go up) as I referenced the horizon at the plane's tail. Images of the SNJ auguring into the ocean with me wedged in the airframe flashed in front of me as my breathing got heavier and my heart started pounding.

By this time, I was well out over the Catalina Channel and was in no danger of violating any restricted airspace. Avoiding bugsmashers was a totally different story, however, since this area was a very popular training ground for student pilots. A Piper Tomahawk cruised serenely by off my right wing on a reciprocal heading, at the *same* altitude. I glimpsed the guy in the right seat, his mouth open, as his head swiveled to follow me in the opposite direction. Not only would I probably be fish food soon, but I would also be listed in the FAA reports as "the guy flying around backwards," like something out of a bad Disney movie.

I had to laugh and was able to calm down enough to take stock of my situation. I began an very shallow left turn to orbit while I pondered my predicament. I considered pushing all the way into the back seat and flying home from there, but decided against it since I had no back-seat time in the SNJ which was hard enough to land from the front seat. Besides, if Pop saw me taxi in from the rear seat, I'd have some pretty fancy explaining to do. Solo flight from the rear seat in this bird is simply *not* done.

I decided flying from the back seat would be my last resort if I couldn't uncork myself. I took several deep breaths, re-

laxed, and exhaled as completely as I could, trying to think skinny. Inching my way backwards, I could feel my ribs ride over the steel pipes like the bumps in a corrugated washboard. By pressing my elbows together, I reduced my shoulder width a fraction of an inch, which, combined with some serious wiggling, allowed me to pop free into the front cockpit.

The whole affair took about 10 minutes, but it felt like hours. I truly felt as though I had been reborn. The rest of the flight went uneventfully and I recovered with a three-point greaser at home.

After I shut down, my dad asked how things went and as casually as I could, I replied, "No problems. Just your everyday fun flight."

For about a year afterward, all I had to do to give myself a case of the heebie-jeebies was to think about my flight in the SNJ. I didn't tell anyone the story for two years. By that time, I got a chuckle from it, but I'm sure my fellow Griffins will now have the answer as to why my hair is prematurely gray.

As humorous—or horrifying—as this story is, it isn't worth the ink to write it unless I learned something from my experience. First, and foremost—and perhaps the most obvious—is that ignoring that quiet but persistent little voice of reason that says "This is stupid!" can sometimes be a fatal mistake.

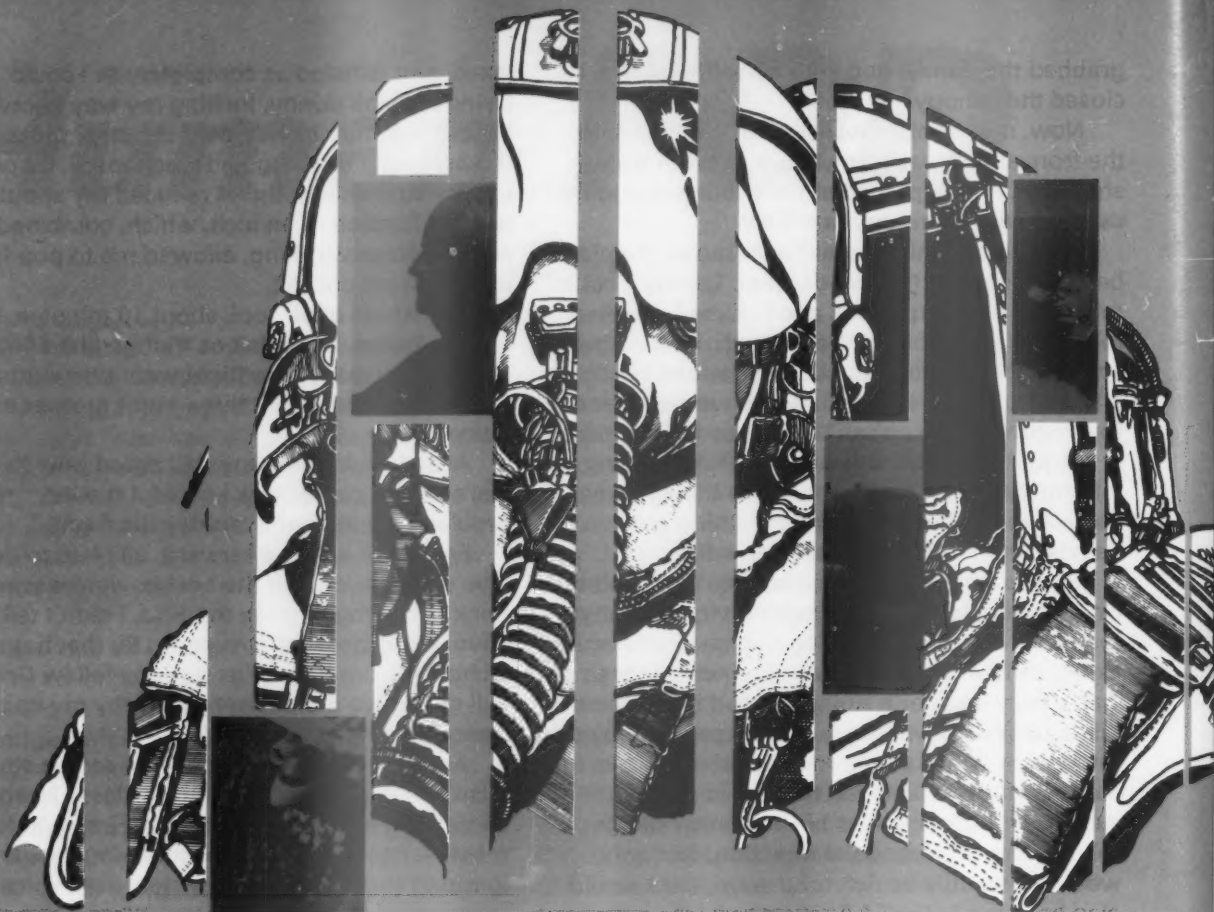
I know I heard the voice *before* I jammed myself into that tiny hole. Leaving the canopy open was my original near-fatal error. On reflection, I'm sure Dad would have preferred my landing with an open canopy than my becoming a "stupidity statistic." (The SNJ flies perfectly fine, right up to Vmax, as a convertible.)

The other lesson might not be as obvious: Leonardo da Vinci had it all wrong. Visionary genius that he was, he still never figured out that the prone position is no way for any self-respecting aviator to fly, whether pointed forward or aft. Five hundred years after

Leonardo, I'm living proof of that fact!

Lt. Brennan is an S-3 pilot with VS-38.

Not only would I probably be fish food soon, but I would also be listed in the FAA reports as "the guy flying around backwards..."



The Hazards of Overcompartmentalizing

By Lt. Jim Willson

Approach: "710, you are three-quarters of a mile. Call the ball."

COTAC: 710, Viking, ball, 6.5."

LSO: "Roger ball, Viking. Sixteen knots...Don't settle...Little power...Power!"

Pilot (over ICS as the hook grabs the wire): "Damn, they're serving chicken curry tonight and I'm too hungry to make it to mid-rats."

Boss: "710, your hook touched down two feet from the ramp!"

Pilot (swallowing): "Roger, Boss."

How many times have you been on a flight and thoughts keep invading your mind, distracting you? That phone bill you haven't paid yet, a fight with your wife or girlfriend, the chewing out by your department head; each are ex-

amples of things that we deal with by compartmentalizing, something that all aviators need to do to survive.

We compartmentalize on every flight. No matter how big, anything that does not apply to the mission is filed

away, and if we don't, we have problems. It just goes to show that chicken curry *can* kill you.

Compartmentalization has a dangerous side, however. Two years ago my father died, while I was a student

with VT-86. I was home on Christmas leave when I learned that he was terminally ill and only expected to live through the coming May. I learned about all aspects of his illness and felt I was in control of my life. I returned to Pensacola ready to continue training.

Squadron policy was to tell your advisor of anything that could affect your training. We both agreed that since my father's death was not imminent, I should continue flying. It was my father's wish to see me get my wings so I flew like I never flew before. I was getting one or two above-average grades on every hop. I started thinking that I was going to be one hell of a Naval Aviator.

Here I am, my father is dying and I'm getting aboves. I'm a great compartmentalizer. I can turn my problems off like a switch.

I was doing well enough that it looked like I would get two weeks of leave between my last flight and my wing date in March. I called home to tell my mother but her response was not what I had expected.

"Well, I only hope he lasts that long," she said. My heart went through the floor. What I thought would happen in May was now coming a lot sooner. I called my advisor to let him know of the change in my father's health and to discuss getting leave a little earlier. His last words to me were, "Are you sure you're up to flying your event tomorrow?"

"Sure," I said, "no problem." In my mind, there was no problem. I had been flying for more than a month now knowing that my dad was going to die soon. I didn't get much sleep that night. However, I had stayed up real late studying for hops before.

The next morning I showed up for my flight. I remember that, when I was walking to the brief, I was thinking about how I was going to get Student Control to cut my leave early. I wasn't thinking about my flight. I had trouble

concentrating on the brief; I couldn't get Dad out of my mind. For the first time, I thought, *Maybe I shouldn't fly. No, it's too late to back out now. I'm committed.*

I flew the hop. It started out all right. Then, I started to lose concentration and make little mistakes, mistakes I usually didn't make. The problems and pressure piled up. Then, it happened. I couldn't think at all. All I remember is fear. I was no longer in control of myself or my life. I was literally FOD in the cockpit, serving no useful purpose.

When we returned, I started filling out the paperwork for my first "down." One thought kept running through my mind. *How could I have been so stupid to fly? It's not like me!* I got a lecture and was then ordered home on emergency leave. My father died four days later.

So, what happened? I fell into the trap that prolonged compartmentalization sets for you. Each time you compartmentalize, you activate a defense mechanism known as "denial" to handle the stress. For small or large problems that last a short time this will not cause any difficulty. In fact, that's a healthy way to deal with the stress—as long as you act to eliminate the problem afterwards. However, if you don't take care of the problem, and you keep compartmentalizing, *stand by.*

What had I thought? *"Here I am, my father is dying, and I'm getting*

aboves!" As I know from experience, I didn't recognize the warning signs. Everyone has a limit. You can estimate what that limit is, but you won't know it until you reach it. When your defenses break down, it's like a dam: everything happens all at once.

I was lucky. I discovered how I reacted to extreme stress at an early stage in my aviation career. The consequences were minimal. I got a down. There was an instructor there to make sure I didn't kill myself. As fleet aviators, we no longer have the luxury of playing for such low stakes. There's no instructor to help us get home safely.

If there's a problem in your life that requires you to compartmentalize, remember to admit that you have a problem. Be as objective as possible. If there's a change in the situation, take yourself off the flight schedule for a few days and get things under control.

The best way to deal with the problem is to solve it. There are, however, some problems that you can't solve, like death and family illness. Let someone else know you are having trouble, someone you trust and who knows you. At least, let your skipper know. It's his airplane and you're *his* "asset."

Keep your confidant up to date. He may see changes in your behavior when you don't. Listen to him, and don't be too proud to admit that you're human.

Lt. Willson flew S-3s with VS-37 as a TACCO. He is now attending the Naval Postgraduate School.



Good Deal Gone Bad

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By Lt. Dean Coester

After a fantastic weekend at the beach and not much sleep, we launched solo for home base...

At last, the elusive, instructor good deal had been approved. We planned a Friday afternoon launch from NAS Homeplate to East Coast AFB for some fun in the Florida sun. Four IPs, two aircraft and no students. What a deal!

Our good mood started to turn sour as the day wore on past takeoff time with no up cross-country birds. This delay was starting to impinge on our good time. A five-hour, Friday night flight was not on our agenda.

Finally, maintenance called with two up jets. We hurriedly suited up and after a quick preflight, we hustled to get airborne. We completed our prestart and start checklists but something was not quite right.

"Let's see," I mumbled, "the engines are running normally, flaps are set, and I've got the clearance...Oh no! I've forgotten to strap in."

The thought of a parachuteless ejection rammed one thought home. Slow down. Get-there-itis can kill you! After all, it's better to arrive late than not at all. The beach will still be there.

Two days later, after a fantastic weekend at the beach and not much sleep, we launched solo for home base.

It's OK though, I thought, I haven't violated bottle-to-throttle and I feel pretty good. Fifty knots of wind in the face, I should be able to make it in one leg.

Constantly checking groundspeed and gas, I observed, "HMMMM, looks like I'll be right at fuel minimums, but the forecast is good. I can make it. After all, who wants to spend an extra two hours on a Sunday night diverting into Midway AFB when I can be home."

I tried to update the weather en route. No joy on





Metro or any FSS. The center guy was clueless. He couldn't seem to figure out the "codes".

"It's OK," I told him, "I'll get the weather closer to base." Gas is still holding in there but that "feeling" is beginning to show up.

Finally, ATIS was calling the weather 1,000 broken, visibility 3 miles in light fog and getting worse! This wasn't good. I was past the en route divert, with no local divers available.

I had slim bingo capability, at night and in the goo. My

pucker factor was getting high. I flew a "simulated," minimum-fuel GCA in the goo aggravated by vertigo, poor cockpit lighting and an attitude gyro that had precessed.

Thank goodness, there's the runway. Full stop and this flight was over. Whew!

Obviously get-there and get-home-itis played a large part in this scenario. The potential was there for this "good deal" to turn into a nightmare. Fortunately, everything worked out this time. Unfortunately, this flight is not an isolated

case. Aviators push to get there all the time. The possibility of a preventable mishap is present simply because the pilot in question wants to push to get where he's going. What if fog had rolled in? Bingos are never fun, especially at night with minimum fuel. We all need to take a look at ourselves and our practices to make sure we don't fly ourselves into a box we can't get out of. The mishap report would have said it all: pilot error, fatigue, poor preflight planning, totally preventable. ◀

Lt. Coester is an instructor with VT-26.

Triggered Lightning:

You Don't Need a Thunderstorm To Find It

By LCdr. Michael W. Neal

It's another uneventful hop and get-home-itis is settling in. As you approach your base, you vaguely recall that the forecast said something about thunderstorms moving through the area. That's no problem; you've dodged some of the biggest buildups in WESTPAC.

As you enter the storm, ominous black clouds envelop you and there is static in your radio. St. Elmo's fire also surrounds the aircraft. A brilliant flash temporarily blinds you. The instrument panel lights up, showing that the rpm is dropping, the hydraulics have failed, your navigation systems are tumbling, and the wings are folding. Your radios are dead, the tailhook is down and your bomb-bay doors are open.

Can this really be happening? You wonder.

You'd better believe it. While lightning strikes are rare occurrences, they do happen and the results can be disastrous.

Lightning occurs in and around thunderstorms in the form of cloud-to-cloud lightning and cloud-to-ground lightning. With proper planning, you should be able to avoid both types. However, several recent Air Force studies have shown that many lightning strikes on aircraft are not these types. Research has discovered that some lightning is actually triggered by the aircraft, itself. Strikes have occurred in areas where no other lightning activity was observed.

On March 26, 1987, NASA launched an Atlas Centaur rocket into a driving rainstorm. No lightning had been forecast or observed. The rocket was hit by lightning causing a single, random memory upset in the onboard computer. The rocket and its payload were lost. We run the same risk in today's sophisticated manned aircraft.

Triggered—or aircraft-induced—lightning can occur in the clear as well as in snow, dust, smog and sandstorms. It is often preceded by a buildup of static noise in communication gear and by the presence of a corona. While triggered lightning does not have the intensity of natural lightning, the damage can still be high. In 1978, an Air Force transport was descending through the freezing level when lightning struck it. The aircraft received more than \$7,000 damage to the navigation lights, electrical system, props and left flap as it descended through a low stratus deck with no thunderstorm activity within 25 miles.

The Air Force has concluded that 90 percent of their aircraft lightning strikes were generated by the aircraft. Here is the general information given by Air Weather Service meteorologists.

Thunderstorms are not required for lightning strikes or electrostatic dis-

P-3s account for 54 percent of the strikes because of their operating altitudes.



charges. Aircraft and rockets can trigger lightning strikes.

Clouds are composed of charged water droplets and ice crystals. The discharge results from the interaction between the aircraft and the cloud, particularly in convective clouds. The convection does not have to reach a thunderstorm state.

There are a number of low-level conditions that have an increased potential for triggered lightning strikes. Most low-level strikes occur in clouds and precipitation at flight levels where the air temperature is between -8 degrees C. and +8 degrees C. These temperatures generally occur within 5,000 feet (above or below) of the freezing level.

At low levels, triggered lightning often occurs near large downdrafts and can coincide with turbulence. When aircraft-induced lightning happens during thunderstorm penetration at low levels, moderate or greater turbulence can be encountered near the edge of the downdraft.

The probability of a lightning strike increases the longer a plane remains in or near precipitation or convective clouds. There are also high-level conditions that increase the potential for a strike. Statistics show that triggered lightning strikes that occur in high

clouds are most likely to happen at temperatures below -32 degrees C., and above 28,000 feet.

Aircrews who have experienced lightning strikes at high altitudes rarely reported turbulence or precipitation, indicating a poor correlation between triggered lightning and turbulence at high levels.

There is an increased potential for triggered lightning even after the thunderstorm has dissipated. Such cases are particularly important as no precipitation shows on aircraft thunderstorm-avoidance radar.

At low levels, aircraft-induced lightning can also occur where there is a lot of dust or pollution. These strikes result when the plane acts as a relief mechanism for charged particles.

If you don't think a lightning strike can happen to you, just ask the 158 crews who reported lightning strikes between 1979 and 1989. (See Table.) Notice that P-3s account for 54 percent of the strikes because of their operating altitudes. But, every aircraft has suffered a strike.

Don't get caught. Plan ahead for contingencies, know your diverts and be aware that lightning doesn't have to come from active thunderstorms. ◀

LCdr. Neal is an oceanographer in the Warfare Analysis Division of the Naval Air Systems Command. He was previously a Surface Warfare Officer in USS *Cleveland* (LPD-7).

A-4	7
A-6	4
A-7	2
C-119	2
C-12	13
C-130	5
C-131	1
C-4	2
C-9	4
E-2	1
EA-6	1
F-14	5
F-18	4
F-4	7
H-1	2*
H-46	1*
H-57	2*
P-3	86
S-3	1
SH-3	1*
T-2	3
T-39	3
T-44	5

* Ground Strikes
** Data from Naval Safety Center

CREW REST: A Two-Way Street

By LCdr. George W. Postell



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We leveled off at 12,000 feet while descending toward our destination. I finished copying ATIS and mentioned to the PAC that I thought we had been cleared down to 8,000 feet. He said that he thought it was 12,000 feet. I was sure we had been assigned 8,000 feet. I told him to slowly descend while I called center for confirmation. At that point, the controller anxiously called for our altitude.

We immediately stopped at 11,300 and climbed back to 12,000 while I muttered several epithets to myself. Twenty minutes later, as we taxied off the runway, we got the dreaded call from ground control.

"Center requests you call them on the telephone."

The subsequent phone conversation revealed that a commuter aircraft had passed within three miles horizontally and 500 feet vertically of our aircraft. The resulting collision alarms accounted for the controller's hesitation in answering my confirmation call. We had, in fact, been cleared to 8,000 feet but a subsequent assignment back to 12,000 feet canceled the earlier clearance.

I had let myself become distracted as I was copying the ATIS. Realizing that other similar situations have resulted in death and destruction, I pondered why I had made such an amateurish mistake, especially since I have more than 3,000 hours in P-3s.

Both of us pilots were current and had had adequate crew rest—or had we? The NMAC occurred during the 14th hour of my 14th consecutive workday. I had left the house at 0300 to make the four-hour drive to the field and the 0800 check-in for active

duty. Crew-rest limitations are clearly defined in numerous NATOPS and OPNAV directives. Aviation commands are not given room for interpretation. Of course, what the crewman does with his rest period is up to him.

Simple mistakes such as missed checklist items have recently resulted in airliner debris and passengers being scattered over a highway in Detroit and a river in New York. Mishap reports typically state that the mishap crew had adequate rest, yet fatigue often creeps in as a factor. When a flight crew begins an 18-hour work period at 2200, they have a long night and day ahead of them.

Maybe that "resting" on the golf course or racquetball court deserves a closer look. Reserve airmen work full days at the office, drive to the squadron to fly at night in bad weather, then drive a couple of hours back home; that routine is all too common.

How typical is the department head who tends to his responsibilities during the day and then flies until midnight? Fatigue was a factor at Chernobyl, Three Mile Island, and the NASA Challenger explosion. I consider myself the beneficiary of a relatively inexpensive lesson. My mistake resulted in some personal embarrassment and paper work for people who had better things to do. Some of us are not so fortunate. ◀

LCdr. Postell is a P-3 pilot with VP-66. He is also a civilian pilot with NASA.

LETTERS

Re: Sunglasses

NAS Point Mugu, Calif. — As Air Operations Officer, I see all kinds of sunglasses being used by our aircrews. I have seen articles that encourage wearing GI sunglasses but ultimately leave the choice to the individual. Once and for all, I'd like to see something official and definitive about wearing sunglasses.

I wonder if the Oakley Thernuclear Protection that is advertised is really that good. I have always worn Bausch and Lomb Ray Bans without eye strain or fatigue. I wonder if the same can be said of the current crop of neon-colored, polarized, reflective, wrap-around eyewear.

Cdr. John B. Manly, Jr.

● The only eyeglasses now authorized for use in uniform are those issued by the Navy. However, this has been honored more in the breach than in the observance — as Cdr. Manly notes.

Navy-issued sunglasses comply with current recommendations for UV and light hazard protection. In fact, they are as good, or better, than anything on the market.

The Naval Safety Center can't comment on the claims by manufacturers of advertised glasses, and we suggest that anyone concerned about particular glasses write to that manufacturer. — Capt. D.W. Yacavone, MC, Head, Aeromedical Division

Re: Cruiser's Rules (Aug '90)

Omaha, NE — I enjoy *Approach* and look forward to every issue, but I take exception to two of Lt. Hodges' rules. First, I am a helicopter pilot and spend most of my life below 5,000 feet AGL. Lt. Hodges tells us to "never turn and descend on instruments below 5,000 feet." My training has allowed me to handle a simultaneous turn and descent.

Second, Lt. Hodges recommends placing "Don't screw it up" at the end of briefing cards. He seems to think we can avoid mishaps in this manner. Using that logic, why not put it in NATOPS?

Does he suggest that telling people to "not screw it up" has any bearing on their behavior in the cockpit? If I am the copilot and my PIC admonishes me in this way, our flight is already off to a bad start. How about something more positive like "If we screw up, let's talk about it and get things back on track to avoid a dangerous situation"?

LCdr. Randall L. Rothchild
XO, Navy Recruiting District

Correction: "Bugsmasher at One, No, Three, Make It Seven O'Clock!" in the January issue was incorrectly attributed to LCdr. P.M. Wickliff. Lt. Yancy B. Lindsey, an LC-130 pilot with VXE-6 wrote the article. — Ed.

Re: "Nugget's Night In the Barrel" (December '90)

FPO New York — This story had several interesting points concerning 4.0-degree glideslopes and nugget experiences. However, Lt. Whitten's article indirectly indicates that the CATCC's instructions were a cause factor in his difficulties with lineup. While I don't dispute his recollections, I know his experience didn't happen on the *Roosevelt* while he was assigned to VF-84.

The *TR*'s CATCC team has never and will never tell an aircraft to "dirty up at six miles" on a CV-1 approach. Nor will we "hook" bolter aircraft to the final bearing at three miles on downwind unless directed by higher authority. This procedure is rarely done except in low-state or emergency situations, which didn't apply in Lt. Whitten's case.

Since no date or specific carrier was identified in the story, your readers will conclude that the event happened on board *TR* where the F-14 squadron is assigned. I assure you it didn't.

We in *TR*'s CATCC take pride in our safety record, and that we strictly follow NATOPS. I know he wrote his article to help fellow aviators, but we feel that our reputation has been tarnished.

CATCC's do make mistakes, and we enjoy *Approach* so that we can all learn from others. If

anonymity is essential, then at a minimum, the date of the event should be included. We don't wish to put the blame for incorrect procedures on others, nor do we want it unjustly placed on our organization.

Ltjg. R.B. Coco, "Rough Rider CATCC"

● While VF-84 is part of *Roosevelt*'s air wing, there was nothing to specifically indicate that the story occurred on that carrier. At any rate, we certainly did not intend to tarnish that ship's reputation. As you pointed out, there were several points and hopefully, lessons to be learned from this aviator's experience.

CV NATOPS says that the 8-nm fix is the absolute minimum for dirty-up. As always, the pilot in command is responsible for the safe conduct of the flight. In this case, the normal pucker factor of a night CV recovery, compounded by no moon or horizon, and moderate turbulence, should have triggered an immediate question about a 6-mile dirty-up.

Depending on the pilot's anxiety level, a prudent response may have been to take it around and set up for another, more comfortable start. — Ed.



Approach welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: *Approach* Editor, Naval Safety Center, NAS Norfolk, VA 23511-5796. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.



**There are no leftovers with this type of turkey.
Unfortunately,
the same can sometimes be said
of the aircraft they hit.**

Watch out!

LIBRARY OF MICHIGAN

MAY 03 1991

**U.S. DOCUMENT
RECEIVED DEPOSITORY**

A turkey buzzard struck this VQ-4 C-130 during a training mission in the approach pattern at NAS Patuxent River. Although the crew was not injured, and they were able to bring the Herk back home, the 15-pound bird caused more than \$9,000 worth of damage.

